

**Caribbean Dialogue on Water and Climate Stakeholders Meeting
Sandals Grande Hotel, Castries, Saint Lucia**

October 9, 2002

The Caribbean Dialogue on Water and Climate (CDWC) was established to promote and coordinate policy discussion and action on water and climate among Caribbean countries. The forum provides a framework for the dissemination of information, exchange of experiences, collaboration, and communication to address climate change in water resource management. Funded by the Netherlands-based International Secretariat for the Dialogue on Water and Climate (IS-DWC), the Caribbean initiative is also designed to promote the exchange of information and experiences with small island states of the Pacific Region. The Caribbean Environmental Health Institute (CEHI) and the Unit for Sustainable Development and Environment of the Organization of American States (OAS/USDE) are serving as the Dialogue Convener and Secretariat, respectively.

As part of its activities, the CDWC held two stakeholder meetings in the second semester of 2002. The CDWC held its first Stakeholders Meeting in July 2002 in conjunction with the MACC Project in Roseau, Dominica. The second consultation was held on October 9, as a one-day parallel session during the 11th Annual Caribbean Water and Wastewater Association (CWWA) Conference and the 1st Caribbean Environmental Forum and Exhibition.

The Second CDWC Stakeholders Meeting was co-chaired by Jan Vermeiren (Principal Specialist, OAS/USDE) and Vincent Sweeney (Executive Director, CEHI). Rick Connor of the IS-DWC was also in attendance.

Session One: Opening Ceremony

The Workshop began with a brief opening session co-chaired by Vincent Sweeney and Jan Vermeiren. The following opening addresses were presented:

CEHI/OAS Welcome Remarks and Background – *Vincent Sweeney, CEHI and Jan Vermeiren, OAS*

Mr. Sweeney and Dr. Vermeiren provided participants with a background on the objectives and history of the CDWC as well as its linkages to other regional projects in climate change and water resources. Some of these projects include Mainstreaming Adaptation to Climate Change (MACC), Caribbean Planning Adaptation to Global Climate Change (CPACC), Adapting to Climate Change in the Caribbean (ACCC), and Integrating Watershed and Coastal Area Management (IWCAM).

Information on Dialogues on Water and Climate – *Rick Connor, IS-DWC*

Mr. Connor highlighted the need to learn to better cope with climate change and climate variability. This encompasses predicting and coping with extreme weather events (e.g. floods, droughts, cyclones and hurricanes) and seasonal weather patterns. Mr. Connor also underscored the importance of bridging the information gap that currently exists between water users and practitioners.

Pacific Collaboration – *Clive Carpenter, SOPAC*

Mr. Carpenter focused his remarks on the partnership established between the OAS, SOPAC and CEHI in the area of water and climate change. He welcomed the South Pacific – Caribbean

collaboration and is prepared to work for a joint agreement and a joint plan of action between the two regions. He also expressed his support for the partnership established.

CDWC Background – Patricia Aquing, CEHI

Ms. Aquing provided background on the development of the CDWC. She informed the participants of the January 2002 Inter-Agency Meeting on Climate and Water, at which the CDWC was conceived. Ms. Aquing presented the objectives of the CDWC:

- ◆ Exchange of information and experiences of the Pacific and Caribbean region;
- ◆ Share of expertise and information;
- ◆ Promote political commitment to achieve improved policies, institutional framework and approaches to the water sector;
- ◆ Develop and implement a dialogue campaign;
- ◆ Create an interactive website at the OAS;
- ◆ Produce a joint Small Island Developing States (SIDS) issue paper on water and climate;
- ◆ Disseminate best practices/lessons learned, and
- ◆ Network between regions.

She stressed the need for SIDS to have a strong voice on climate and water. Ms. Aquing informed the participants that the CDWC received the endorsement and support of the CARICOM Caucus of Ministers of Health (Washington, September 2002).

Meeting Objectives – Sasha Beth Gottlieb, OAS

Ms. Gottlieb presented the objectives for the stakeholder meeting, which were:

- ◆ Foster dialogues between different groups;
- ◆ Contribute to and collaborate with ongoing initiatives and work within the region;
- ◆ Achieve concrete outputs;
- ◆ Suggest pilot projects beyond the Third World Water Forum, and
- ◆ Increase collaboration with partners in the Pacific.

Session Two

Small Islands States Issues Paper and Discussion - Cletus Springer, CEHI/OAS and Marc Overmars, SOPAC

Mr. Springer and Mr. Overmars presented the Water and Climate papers being prepared for the Caribbean and the Pacific regions.

As Mr. Springer presented, the Caribbean paper consists of five parts:

- ◆ Geographic context
- ◆ Characteristics of Vulnerability, Climate Variability and Climate Change – The longer the region delays addressing this issue, the more vulnerable it will be.
- ◆ Current state of water resources management in the Caribbean – There is some progress made but many countries are still hard pressed to maintain adequate water quality standards due to: (a) inadequately quantifying demand for water; (b) lack of sufficient knowledge of hydrological cycles; (c) transpiration and evaporation rates, and (d) information is not being fed equally within the region
- ◆ Vulnerability and risk assessment and adaptation strategies – Focal areas include: (a) human health and sanitation (e.g. water-bourn diseases, cardiovascular illnesses, and dengue fever); (b) agriculture and food – promoting better soil management; (c) coastal zones and marine eco-systems; (d) hydrology and water resources, and (e) insurance and financial services.

Catastrophic events can lead to decline in consumption and increase the uncertainty in risk assessment

- ◆ The road to Kyoto and beyond – This is the most critical part of the program of action.

Mr. Springer explained that the Caribbean region is not yet practising integrated water resources management (IWRM), which would help it better adapt to changes in water resources due to climate variability. Mr. Springer also spoke about the insurance and financial services and that climate change and variability is driving up insurance premiums. As a result, it is too costly for many to get insurance. Specifically he highlighted the case of no insurance or under insurance of farmers.

The presentation by Mr. Overmars highlighted the need to enhance public awareness on climate and water issues and build capacity in the Pacific region. The Pacific islands represented by SOPAC tend to be very narrow and susceptible to droughts, floods, and coastal erosion. They lack water resources data and policies and the human capacity needed to collect the data and implement the policies. This is due, in part, to the very small populations of these nations. As a region, 16 SOPAC member countries adopted a Regional Action Plan for Sustainable Water Management. One of its principal goals is to strengthen the capacity of small island countries to conduct water resources assessment and monitoring. Mr. Overmars also informed the participants that SOPAC is responsible for the parallel session on SIDS at the Third World Water Forum, and will be working with the Caribbean region to ensure their participation.

Session III

The Status of CPACC Climate Monitoring – Keith Miller, University of the West Indies¹

The CPACC monitoring system consists of 18 stations that perform tidal monitoring. In summary, there has been no noticeable change in sea level, but there is a need to continue monitoring. The CPACC data shows some gaps due to loss of data in the communications links and measures are being taken to rectify this problem.

Responding to Climate Change in the Water Sector – Marcia Creary, CPACC and ACCC Projects²

Ms. Creary asserted that there is a need to assess impact of climate change on water sector in the Caribbean. She provided the meeting with background information on the CPACC, MACC, and ACCC projects. The CPACC Project ran from 1998-2001, MACC will run 2003-2007, and the Canadian-funded ACCC help bridge the two aforementioned Global Environment Facility-funded projects from 2002-2004.

The CPACC Project made strides towards achieving this through establishment of a regional network sea level and climate change monitoring station, coastal resources inventory system, and coral reef monitoring program. It has also created a network of agencies working in this field and significantly increased awareness in climate change. ACCC focuses on formulation of implementation strategies for adaptation in water sector and a risk management approach to climate change issues and is also working in the area of regional and local climate change projections.

¹ Written with Shelly-Anne Jules-More of the University of the West Indies.

² Prepared with James Bruce and Rawlestone Moore of the ACCC/RPIU.

Caribbean climate changes to date are a mean temperature increase of 1 ° C and a reduction in annual rainfall. Also, climate change factors impacting water sector are: water scarcity, reduced base flow and increase evapo-transpiration

Rainfall Forecasting and Applications in Fiji – Janita Pahaladad, National Climate Centre, Australia

Since it became operational in 1999, Fiji has been using an ENSO-related rainfall forecasting application. This serves as a good indicator for three-month rainfall forecasts and drought forecasting. Fiji is characterized by a tropical maritime climate, predominant East to South easterly winds, highly variable rainfall, climatic events that are influenced by island topography, large seasonal variation, and pronounced dry or wet zone in the country.

Using the rainfall forecasting application the length of the drought can be easily determined. This application can give lead-time up to 12 months and its performance is easily tested. It doesn't require high level of training/expertise as it is simple and easily implemented.

Session IV

Panel: A Sectoral Analysis of the Impact of Climate Change on Water Resources

This panel was moderated by Roger Pulwarty (NOAA and the University of Colorado). The other panelists were Frank Farnum (The Caribbean Institute for Meteorology and Hydrology, CIMH), and Basil Fernandez (Water Resources Authority, Jamaica). In addressing the impact of climate change on a sectoral basis, the panelists underscored the benefits of an integrated approach to water resources management. They highlighted the need for baseline data and projection and better collaboration between scientists and water managers in order to prepare for and better understand climate change and climate variability on different timescales. Mr. Farnum stressed the importance of rescuing historical data, which CIMH is doing together with the ACCC project. Given this and other data, he questioned if the phenomena of anthropogenic climate change is occurring, or if we are merely observing a cyclical pattern of climate variability. Mr. Fernandez explained that Jamaica possesses hydrological data (water quality/quantity) yet it still requires climate information to carry out balances and make allocations for each water basin. Water managers need this information from the meteorological services. Jamaica has noted a decrease in surface water flows and accordingly increased use of ground water as well as an increase in flood magnitudes and frequency. It is difficult at this point to separate the impact of demographic and land use patterns from the impact of present climate variability and to extrapolate the potential impact of climate change in better understanding the root of these issues (hence the need for an integrated approach).

Session V

Panel: NGO Perspective on Water Resources Management in the context of Climate Change

In technical topics such as water resources management and climate change, the voice of non-governmental organizations is often not heard. This panel brought together representatives from various NGOs to express their particular perspective on this topic. The moderator for this session was Flyod Homer (Caribbean Conservation Association). The panel also included Atherton Martin (Dominica Conservation Association), Flavia Cherry (Caribbean Association for Feminist Research & Action), and Vijay Krishnarayan (Caribbean Natural Resources Institute). The issue of public participation in climate change and water resources management was central to this theme. Ms. Cherry provided background on the cultural impediments to power sharing. This has potential to be reflected in women's needs not being considered in addressing issues related to

water and climate. She expressed a concern that climate variability and climate change information was shared by technical experts but not with women. Mr. Martin gave a compelling presentation on the need for all members of society to work to empower the vulnerable, as well as to stand up for our convictions. These have direct implications in water resources and climate issues in the areas of land use management and economic policies. Excessive demand for water is due to policy, technical considerations, and lifestyle choices. Mr. Krishnarayan explained that non-state actors have a critical role to play in this field. They can improve awareness, identify issues (lessons learned – best practices), and provide delivery services. He also highlighted some impediments to improving watershed management:

- ◆ Poor information, lack of basic mapping of watersheds;
- ◆ Lack of capacity to undertake tasks effectively on the part of water resources management;
- ◆ Fragmented institutional landscape, and
- ◆ Control by state sector agencies.

Session VI

Panel: Climate Variability/Climate Change, Water, and Human Health

The final panel focused on climate variability/climate change and water on human health. Participants in this panel were Reynold Murray (Ministry of Health and Environment, Saint Vincent and the Grenadines), Herold Gopaul (CEHI), and Clive Carpenter (SOPAC). Dr. Murray explained that climate change/climate vulnerability is resulting in a change of volume of water available. This combined with an increased demand for water and decreased water quality is having a serious impact on human health. Accordingly, focus must be paid to water-borne, vector-borne, food-borne and rodent-borne diseases and sanitation issues. Mr. Gopaul's comments focused on the role of decision makers. Many decision makers view the subject of climate change as abstract and highly technical in nature. They also lack the technical/medical knowledge on human health and environment issues and the needed infrastructure and resources to take concrete steps regarding human health, climate change and water resources. In order to overcome these barriers, those working in water resources and climate change must collaborate, share information, strengthen and improve public health infrastructure, promote research (private public sector and civil society), and promote education and awareness building on all levels. Mr. Carpenter concentrated on the issue of risk, and specifically how to avoid risks to human health from climate change and water resources. He underscored the need for disaster preparedness and mitigation, better understanding of risk, raising advocacy (specifically through education and government participation), and linking water to human health in government budgets.

Session VII

Preparations for Points for an Action Plan beyond the Dialogue and Wrap-Up – *Cletus Springer, CEHI/OAS*

As a conclusion to the daylong workshop, Mr. Springer led the group through a discussion about next steps, specifically plans for the Third World Water Forum (Kyoto, Japan) and beyond. Mr. Springer underscored the need for coalition building and collaboration among SIDS, emphasizing the work that CEHI and SOPAC had done as a prime example. He remarked that it would be an important challenge for the soon-to-be-formed Caribbean Community Climate Change Centre to bring these disparate parts together and create synergies. Mr. Springer also expressed the importance of setting clear timetables and institutional responsibilities in terms of climate change and water resources activities and goals. He stated that research and data is a high priority and indicated that pertinent data is being rescued under a Finnish-funded SIDS project. Mr. Springer also spoke of the need to scale down models, using regional specific data. Finally, echoing the

sentiments of many presenters and participants, Mr. Springer spoke of the significance of public awareness, education and training. In particular, he identified both the media and CDERA as potential partners.